Appendix H: Noise Analysis Summary Tables

Noise Analysis Results

Increase 3 dBA or more

			EXISTING CONDITION									NO BUILD CONDITION (2019)							BUILD CONDITION (2019)						
			Measured Existing Levels			RWCDS Traffic Existing Levels						Traffic							Traffic						
Site	Measurement Location	Time	Measure L_{eq}	Measure L_{10}	TNM L_{eq}	TNM L_{eq}	Correction Factor	Adjust Traffic L_{eq}	Amuse-ment Leq	Adjust Existing Leq	Adjust Existing L10	TNM Leq	Correction Factor	Traffic L_{eq}	Amuse-ment Leq	No Build Leq	No Build L10	Change Leq	TNM Leq	Correction Factor	Traffic L_{eq}	Amuse-ment Leq	Build Leq	Build L10	Change Leq
1	Surf Ave btw W 5th St and W 8th St	Weekday AM	68.2	71.4	66.9	67.0	0.1	68.3	0.0	68.3	71.5	68.0	1.0	69.3	0.0	69.3	72.5	1.0	68.3	0.3	69.6	0.0	69.6	72.8	0.3
		Weekday MD	65.7	68.9	67.0	66.2	-0.8	64.9	63.7	67.3	70.5	67.2	1.0	65.9	63.6	67.9	71.1	0.6	67.9	0.7	66.6	64.7	68.8	72.0	0.9
		Weekday PM	64.6	67.9	65.1	64.7	-0.4	64.2	63.7	67.0	70.3	66.2	1.5	65.7	63.6	67.8	71.1	0.8	67.0	0.8	66.5	64.7	68.7	72.0	0.9
		Saturday MD	65.4	67.7	64.2	66.2	2.0	67.4	63.7	68.9	71.2	67.3	1.1	68.5	63.6	69.7	72.0	0.8	67.9	0.6	69.1	64.7	70.4	72.7	0.7
		Saturday PM	64.0	67.7	63.2	65.7	2.5	66.5	63.7	68.3	72.0	66.9	1.2	67.7	63.6	69.1	72.8	0.8	67.6	0.7	68.4	64.7	69.9	73.6	0.8
2	Neptune Ave btw W 8th St and W 12th St	Weekday AM	68.1	70.8	71.2	70.5	-0.7	67.4	0.0	67.4	70.1	71.4	0.9	68.3	0.0	68.3	71.0	0.9	71.9	0.5	68.8	0.0	68.8	71.5	0.5
		Weekday MD	71.7	74.4	70.4	70.2	-0.2	71.5	56.4	71.6	74.3	71.4	1.2	72.7	56.3	72.8	75.5	1.2	72.2	0.8	73.5	57.8	73.6	76.3	0.8
		Weekday PM	66.8	69.7	70.5	68.5	-2.0	64.8	56.4	65.4	68.3	69.1	0.6	65.4	56.3	65.9	68.8	0.5	70.4	1.3	66.7	57.8	67.2	70.1	1.3
		Saturday MD	68.3	71.5	69.5	69.1	-0.4	67.9	56.4	68.2	71.4	70.0	0.9	68.8	56.3	69.0	72.2	0.8	71.0	1.0	69.8	57.8	70.1	73.3	1.0
		Saturday PM	68.8	72.1	69.5	67.9	-1.6	67.2	56.4	67.5	70.8	68.7	0.8	68.0	56.3	68.3	71.6	0.7	69.8	1.1	69.1	57.8	69.4	72.7	1.1
3	Stillwell Ave btw Surf Ave and Neptune Ave	Weekday AM	71.6	75.8	68.2	68.8	0.6	72.2	0.0	72.2	76.4	69.4	0.6	72.8	0.0	72.8	77.0	0.6	69.9	0.5	73.3	0.0	73.3	77.5	0.5
		Weekday MD	70.6	74.3	68.4	68.6	0.2	70.8	56.2	70.9	74.6	69.6	1.0	71.8	56.3	71.9	75.6	1.0	70.5	0.9	72.7	63.9	73.2	76.9	1.3
		Weekday PM	70.0	73.7	66.1	68.0	1.9	71.9	56.2	72.0	75.7	68.9	0.9	72.8	56.3	72.9	76.6	0.9	69.7	0.8	73.6	63.9	74.0	77.7	1.1
		Saturday MD	71.7	75.2	66.7	68.5	1.8	73.5	56.2	73.6	77.1	69.2	0.7	74.2	56.3	74.3	77.8	0.7	69.9	0.7	74.9	63.9	75.2	78.7	1.0
		Saturday PM	71.0	75.3	65.3	68.1	2.8	73.8	56.2	73.9	78.2	68.9	0.8	74.6	56.3	74.7	79.0	0.8	69.6	0.7	75.3	63.9	75.6	79.9	0.9
4	W 15th St btw Mermaid Ave and Surf Ave	Weekday AM	60.5	64.1	60.1	61.8	1.7	62.2	0.0	62.2	65.8	63.0	1.2	63.4	0.0	63.4	67.0	1.2	63.7	0.7	64.1	0.0	64.1	67.7	0.7
		Weekday MD	59.1	60.3	60.9	61.0	0.1	59.2	53.7	60.3	61.5	62.0	1.0	60.2	53.8	61.1	62.3	0.8	63.1	1.1	61.3	58.2	63.0	64.2	1.9
		Weekday PM	59.8	61.5	60.3	60.3	0.0	59.8	53.7	60.8	62.5	61.2	0.9	60.7	53.8	61.5	63.2	0.8	62.1	0.9	61.6	58.2	63.2	64.9	1.7
		Saturday MD	56.9	59.8	57.2	59.8	2.6	59.5	53.7	60.5	63.4	60.6	0.8	60.3	53.8	61.2	64.1	0.7	61.7	1.1	61.4	58.2	63.1	66.0	1.9
		Saturday PM	59.4	61.2	57.0	60.8	3.8	63.2	53.7	63.7	65.5	61.6	0.8	64.0	53.8	64.4	66.2	0.7	62.3	0.7	64.7	58.2	65.6	67.4	1.2
5	Mermaid Ave btw W 16th St and W 17th St	Weekday AM	70.2	72.3	71.1	70.1	-1.0	69.2	0.0	69.2	71.3	70.7	0.6	69.8	0.0	69.8	71.9	0.6	70.8	0.1	69.9	0.0	69.9	72.0	0.1
		Weekday MD	65.6	67.7	70.6	69.7	-0.9	64.7	51.0	64.9	67.0	70.3	0.6	65.3	51.1	65.5	67.6	0.6	70.6	0.3	65.6	55.9	66.0	68.1	0.6
		Weekday PM	64.7	66.2	68.3	69.4	1.1	65.8	51.0	65.9	67.4	70.2	0.8	66.6	51.1	66.7	68.2	0.8	70.4	0.2	66.8	55.9	67.1	68.6	0.4
		Saturday MD	62.8	65.0	68.2	69.6	1.4	64.2	51.0	64.4	66.6	70.3	0.7	64.9	51.1	65.1	67.3	0.7	70.5	0.2	65.1	55.9	65.6	67.8	0.5
		Saturday PM	62.4	64.4	68.0	69.7	1.7	64.1	51.0	64.3	66.3	70.4	0.7	64.8	51.1	65.0	67.0	0.7	70.6	0.2	65.0	55.9	65.5	67.5	0.5
6	W17th St btw Neptune Ave and Mermaid Ave	Weekday AM	70.2	73.6	63.3	65.4	2.1	72.3	0.0	72.3	75.7	66.5	1.1	73.4	0.0	73.4	76.8	1.1	69.1	2.6	76.0	0.0	76.0	79.4	2.6
		Weekday MD	69.4	72.9	64.2	64.1	-0.1	69.3	50.4	69.4	72.9	65.0	0.9	70.2	50.4	70.2	73.7	0.9	68.5	3.5	73.7	53.9	73.7	77.2	3.5
		Weekday PM	69.3	73.3	61.8	61.6	-0.2	69.1	50.4	69.2	73.2	62.9	1.3	70.4	50.4	70.4	74.4	1.3	65.0	2.1	72.5	53.9	72.6	76.6	2.1
		Saturday MD	70.6	72.9	63.7	63.1	-0.6	70.0	50.4	70.0	72.3	64.2	1.1	71.1	50.4	71.1	73.4	1.1	66.0	1.8	72.9	53.9	73.0	75.3	1.8
		Saturday PM	67.3	71.5	62.6	62.1	-0.5	66.8	50.4	66.9	71.1	63.2	1.1	67.9	50.4	68.0	72.2	1.1	64.0	0.8	68.7	53.9	68.8	73.0	0.9
7	W 19th St btw Surf Ave and Mermaid Ave	Weekday AM	59.0	61.0	61.3	61.7	0.4	59.4	0.0	59.4	61.4	62.8	1.1	60.5	0.0	60.5	62.5	1.1	63.6	0.8	61.3	0.0	61.3	63.3	0.8
		Weekday MD	57.3	59.8	60.4	60.8	0.4	57.7	50.1	58.4	60.9	62.3	1.5	59.2	50.2	59.7	62.2	1.3	63.5	1.2	60.4	57.0	62.0	64.5	2.3
		Weekday PM	57.9	60.6	60.4	61.7	1.3	59.2	50.1	59.7	62.4	62.9	1.2	60.4	50.2	60.8	63.5	1.1	63.5	0.6	61.0	57.0	62.5	65.2	1.7
		Saturday MD	56.4	59.3	59.2	60.3	1.1	57.5	50.1	58.2	61.1	61.5	1.2	58.7	50.2	59.3	62.2	1.0	62.4	0.9	59.6	57.0	61.5	64.4	2.2
		Saturday PM	56.1	59.2	58.1	60.1	2.0	58.1	50.1	58.7	61.8	61.1	1.0	59.1	50.2	59.6	62.7	0.9	61.8	0.7	59.8	57.0	61.6	64.7	2.0
8	Surf Ave btw W 20th St and W 21st St	Weekday AM	72.1	75.4	71.8	72.4	0.6	72.7	0.0	72.7	76.0	73.2	0.8	73.5	0.0	73.5	76.8	0.8	73.6	0.4	73.9	0.0	73.9	77.2	0.4
		Weekday MD	69.1	71.4	70.2	71.5	1.3	70.4	49.5	70.4	72.7	72.4	0.9	71.3	49.6	71.3	73.6	0.9	73.0	0.6	71.9	56.5	72.0	74.3	0.7
		Weekday PM	67.5	71.1	70.3	70.9	0.6	68.1	49.5	68.2	71.8	71.9	1.0	69.1	49.6	69.1	72.7	1.0	72.4	0.5	69.6	56.5	69.8	73.4	0.7
		Saturday MD	67.7	71.0	68.1	70.0	1.9	69.6	49.5	69.6	72.9	71.0	1.0	70.6	49.6	70.6	73.9	1.0	71.6	0.6	71.2	56.5	71.3	74.6	0.7
		Saturday PM	66.2	69.0	68.1	69.9	1.8	68.0	49.5	68.1	70.9	70.7	0.8	68.8	49.6	68.9	71.7	0.8	71.3	0.6	69.4	56.5	69.6	72.4	0.8
9	W 21st St btw Surf Ave and Boardwalk	Weekday AM	57.6	60.4	57.1	59.9	2.8	60.4	0.0	60.4	63.2	60.5	0.6	61.0	0.0	61.0	63.8	0.6	62.5	2.0	63.0	0.0	63.0	65.8	2.0
		Weekday MD	60.3	60.5	56.0	58.9	2.9	63.2	49.1	63.4	63.6	60.4	1.5	64.7	49.3	64.8	65.0	1.5	62.0	1.6	66.3	56.4	66.7	66.9	1.9
		Weekday PM	56.7	59.7	55.3	58.3	3.0	59.7	49.1	60.1	63.1	58.8	0.5	60.2	49.3	60.5	63.5	0.5	59.9	1.1	61.3	56.4	62.5	65.5	2.0
		Saturday MD	54.4	56.8	53.4	60.1	6.7	61.1	49.1	61.4	63.8	60.5	0.4	61.5	49.3	61.8	64.2	0.4	61.2	0.7	62.2	56.4	63.2	65.6	1.5
		Saturday PM	53.6	55.7	53.0	57.1	4.1	57.7	49.1	58.3	60.4	57.9	0.8	58.5	49.3	59.0	61.1	0.7	58.9	1.0	59.5	56.4	61.2	63.3	2.3
10	Boardwalk btw W 21st st and W 20th St	Weekday AM	55.4	56.0	46.2	47.0	0.8	56.2	0.0	56.2	56.8	47.6	0.6	56.8	0.0	56.8	57.4	0.6	47.8	0.2	57.0	0.0	57.0	57.6	0.2
		Weekday MD	52.9	54.3	45.5	46.2	0.7	53.6	49.7	55.1	56.5	47.1	0.9	54.5	49.8	55.8	57.2	0.7	47.1	0.0	54.5	57.8	59.5	60.9	3.7
		Weekday PM	54.1	56.5	44.8	45.3	0.5	54.6	49.7	55.8	58.2	45.5	0.2	54.8	49.8	56.0	58.4	0.2	45.9	0.4	55.2	57.8	59.7	62.1	3.7
		Saturday MD	49.5	51.5	42.9	45.6	2.7	52.2	49.7	54.1	56.1	46.7	1.1	53.3	49.8	54.9	56.9	0.8	47.1	0.4	53.7	57.8	59.3	61.3	4.3
		Saturday PM	52.4	53.8	42.5	44.2	1.7	54.1	49.7	55.4	56.8	44.9	0.7	54.8	49.8	56.0	57.4	0.6	45.3	0.4	55.2	57.8	59.7	61.1	3.7
11	Stillwell Ave btw Surf Ave and Boardwalk	Weekday AM	56.7	57.4	57.2	57.3	0.1	56.8	0.0	56.8	57.5	58.2	0.9	57.7	0.0	57.7	58.4	0.9	59.1	0.9	58.6	0.0	58.6	59.3	0.9
		Weekday MD	55.5	57.8	58.2	57.9	-0.3	55.2	59.6	61.0	63.3	58.7	0.8	56.0	60.4	61.7	64.0	0.8	59.8	1.1	57.1	74.2	74.3	76.6	12.6
		Weekday PM	56.0	58.6	55.6	56.6	1.0	57.0	59.6	61.5	64.1	57.7	1.1	58.1	60.4	62.4	65.0	0.9	58.6	0.9	59.0	74.2	74.4	77.0	12.0
		Saturday MD	54.9	56.5	54.8	57.5	2.7	57.6	59.6	61.7	63.3	58.3	0.8	58.4	60.4	62.5	64.1	0.8	59.1	0.8	59.2	74.2	74.4	76.0	11.9
		Saturday PM	54.4	56.9	54.2	57.1	2.9	57.3	59.6	61.6	64.1	58.0	0.9	58.2	60.4	62.4	64.9	0.8	58.7	0.7	58.9	74.2	74.4	76.9	11.9

Noise Monitoring Results

Site	Measurement Location	Time		L_{eq}	L_1	L_{10}	L_{50}	L_{90}
1	Surf Ave btw W 5th Street and W 8th Street	Weekday	AM	68.2	76.3	71.4	66.1	58.3
			MD	65.7	74.1	68.9	63.2	57.6
			PM	64.6	72.1	67.9	62.3	56.6
		Weekend	MD	65.4	74.2	67.7	61.5	55.5
			PM	64.0	71.6	67.7	61.7	54.9
2	Neptune Ave btw W 8th Street and W 12th Street	Weekday	AM	68.1	77.3	70.8	65.9	59.5
			MD	71.7	80.9	74.4	68.0	60.5
			PM	66.8	75.1	69.7	65.1	59.2
		Weekend	MD	68.3	76.2	71.5	66.4	59.3
			PM	68.8	77.0	72.1	66.9	59.0
3	Stillwell Ave btw Surf Ave and Neptune Ave	Weekday	AM	71.6	78.1	75.8	68.2	61.1
			MD	70.6	79.7	74.3	66.4	60.6
			PM	70.0	77.6	73.7	67.1	61.4
		Weekend	MD	71.7	81.3	75.2	66.9	61.4
			PM	71.0	77.8	75.3	67.6	61.1
4	W 15th Street btw Mermaid Ave and Surf Ave	Weekday	AM	60.5	69.6	64.1	57.1	53.7
			MD	59.1	68.1	60.3	54.9	51.2
			PM	59.8	70.3	61.5	54.2	50.6
		Weekend	MD	56.9	65.8	59.8	53.8	50.6
			PM	59.4	69.6	61.2	56.5	53.7
5	Mermaid Ave btw W 16th Street and W 17th Street	Weekday	AM	70.2	80.2	72.3	66.2	61.3
			MD	65.6	76.3	67.7	62.2	57.6
			PM	64.7	75.8	66.2	61.1	57.6
		Weekend	MD	62.8	71.8	65.0	60.7	57.2
			PM	62.4	72.2	64.4	59.6	56.2
6	W17th Street btw Neptune Ave and Mermaid Ave	Weekday	AM	70.2	80.0	73.6	66.2	58.3
			MD	69.4	79.7	72.9	65.6	54.7
			PM	69.3	79.0	73.3	63.9	56.3
		Weekend	MD	70.6	81.6	72.9	66.2	55.2
			PM	67.3	75.2	71.5	64.0	56.7
7	W 19th Street btw Surf Ave and Mermaid Ave	Weekday	AM	59.0	69.5	61.0	55.4	51.9
			MD	57.3	66.2	59.8	55.3	52.8
			PM	57.9	67.9	60.6	54.8	50.7
		Weekend	MD	56.4	65.3	59.3	53.7	50.8
			PM	56.1	65.1	59.2	53.5	50.5
8	Surf Ave btw W 20th Street and W 21st Street	Weekday	AM	72.1	82.3	75.4	68.2	60.6
			MD	69.1	79.1	71.4	63.5	53.6
			PM	67.5	76.0	71.1	64.0	55.3
		Weekend	MD	67.7	78.9	71.0	61.9	51.9
			PM	66.2	76.9	69.0	62.1	56.4
9	W 21st Street btw Surf Ave and Boardwalk	Weekday	AM	57.6	66.5	60.4	55.2	52.1
			MD	60.3	73.4	60.5	57.3	52.1
			PM	56.7	64.0	59.7	55.2	51.8
		Weekend	MD	54.4	63.0	56.8	51.7	48.5
			PM	53.6	59.6	55.7	52.7	50.3
10	Boardwalk btw W 21st Street and W 20th Street	Weekday	AM	55.4	67.2	56.0	53.0	50.6
			MD	52.9	63.2	54.3	50.2	47.6
			PM	54.1	60.5	56.5	53.1	50.4
		Weekend	MD	49.5	55.2	51.5	48.8	46.9
			PM	52.4	56.6	53.8	52.1	50.7
11	Stillwell Ave btw Surf Ave and Boardwalk	Weekday	AM	56.7	68.2	57.4	52.6	48.4
			MD	55.5	61.6	57.8	54.7	51.1
			PM	56.0	61.5	58.6	55.1	51.9
		Weekend	MD	54.9	64.6	56.5	52.9	49.9
			PM	54.4	63.7	56.9	52.6	49.8

Traffic TNM Results

Receiver	Time		Measured Existing L_{eq}	RWCDS Traffic Existing L_{eq}	2019 No Build L_{eq}	2019 Build L_{eq}
1	Weekday	AM	66.9	67.0	68.0	68.3
		MD	67.0	66.2	67.2	67.9
		PM	65.1	64.7	66.2	67.0
	Saturday	MD	64.2	66.2	67.3	67.9
		PM	63.2	65.7	66.9	67.6
2	Weekday	AM	71.2	70.5	71.4	71.9
		MD	70.4	70.2	71.4	72.2
		PM	70.5	68.5	69.1	70.4
	Saturday	MD	69.5	69.1	70.0	71.0
		PM	69.5	67.9	68.7	69.8
3	Weekday	AM	68.2	68.8	69.4	69.9
		MD	68.4	68.6	69.6	70.5
		PM	66.1	68.0	68.9	69.7
	Saturday	MD	66.7	68.5	69.2	69.9
		PM	65.3	68.1	68.9	69.6
4	Weekday	AM	60.1	61.8	63.0	63.7
		MD	60.9	61.0	62.0	63.1
		PM	60.3	60.3	61.2	62.1
	Saturday	MD	57.2	59.8	60.6	61.7
		PM	57.0	60.8	61.6	62.3
5	Weekday	AM	71.1	70.1	70.7	70.8
		MD	70.6	69.7	70.3	70.6
		PM	68.3	69.4	70.2	70.4
	Saturday	MD	68.2	69.6	70.3	70.5
		PM	68.0	69.7	70.4	70.6
6	Weekday	AM	63.3	65.4	66.5	69.1
		MD	64.2	64.1	65.0	68.5
		PM	61.8	61.6	62.9	65.0
	Saturday	MD	63.7	63.1	64.2	66.0
		PM	62.6	62.1	63.2	64.0
7	Weekday	AM	61.3	61.7	62.8	63.6
		MD	60.4	60.8	62.3	63.5
		PM	60.4	61.7	62.9	63.5
	Saturday	MD	59.2	60.3	61.5	62.4
		PM	58.1	60.1	61.1	61.8
8	Weekday	AM	71.8	72.4	73.2	73.6
		MD	70.2	71.5	72.4	73.0
		PM	70.3	70.9	71.9	72.4
	Saturday	MD	68.1	70.0	71.0	71.6
		PM	68.1	69.9	70.7	71.3
9	Weekday	AM	57.1	59.9	60.5	62.5
		MD	56.0	58.9	60.4	62.0
		PM	55.3	58.3	58.8	59.9
	Saturday	MD	53.4	60.1	60.5	61.2
		PM	53.0	57.1	57.9	58.9
10	Weekday	AM	46.2	47.0	47.6	47.8
		MD	45.5	46.2	47.1	47.1
		PM	44.8	45.3	45.5	45.9
	Saturday	MD	42.9	45.6	46.7	47.1
		PM	42.5	44.2	44.9	45.3
11	Weekday	AM	57.2	57.3	58.2	59.1
		MD	58.2	57.9	58.7	59.8
		PM	55.6	56.6	57.7	58.6
	Saturday	MD	54.8	57.5	58.3	59.1
		PM	54.2	57.1	58.0	58.7

Amusement Noise Results

EXISTING

Receptor	Cyclone Operations											
	Leq at 30 ft	Rows of Building	Distance factor = 10log(D/30)								Shielding	dBA at receptor
			Source Location			Receptor Location			Distance	dBA		
			X	Y	Z	X	Y	Z	(feet)			
Site 1	77	0	3755	1488	20.0	4497	1448	5.0	743	**14**	0	**63**
Site 2	77	2	3755	1488	20.0	3556	2970	5.0	1495	**17**	5	**56**
Site 3	77	3	3755	1488	20.0	2624	1889	5.0	1200	**16**	6	**55**
Site 4	77	4	3755	1488	20.0	2320	1866	5.0	1484	**17**	8	**53**
Site 5	77	5	3755	1488	20.0	1879	1948	5.0	1932	**18**	9	**50**
Site 6	77	5	3755	1488	20.0	1672	2202	5.0	2202	**19**	9	**49**
Site 7	77	5	3755	1488	20.0	1449	1673	5.0	2313	**19**	9	**49**
Site 8	77	5	3755	1488	20.0	1076	1318	5.0	2684	**20**	9	**48**
Site 9	77	5	3755	1488	20.0	986	737	5.0	2869	**20**	9	**48**
Site 10	77	5	3755	1488	20.0	1438	464	5.0	2533	**19**	9	**49**
Site 11	77	1	3755	1488	20.0	2731	1092	5.0	1098	**16**	3	**58**

NO BUILD

Receptor	Cyclone Operations											
	Leq at 30 ft	Rows of Building	Distance factor = 10log(D/30)								Shielding	dBA at receptor
			Source Location			Receptor Location			Distance	dBA		
			X	Y	Z	X	Y	Z	(feet)			
Site 1	77	0	3755	1488	20.0	4497	1448	5.0	743	**14**	0	**63**
Site 2	77	2	3755	1488	20.0	3556	2970	5.0	1495	**17**	5	**56**
Site 3	77	3	3755	1488	20.0	2624	1889	5.0	1200	**16**	6	**55**
Site 4	77	4	3755	1488	20.0	2320	1866	5.0	1484	**17**	8	**53**
Site 5	77	5	3755	1488	20.0	1879	1948	5.0	1932	**18**	9	**50**
Site 6	77	5	3755	1488	20.0	1672	2202	5.0	2202	**19**	9	**49**
Site 7	77	5	3755	1488	20.0	1449	1673	5.0	2313	**19**	9	**49**
Site 8	77	5	3755	1488	20.0	1076	1318	5.0	2684	**20**	9	**48**
Site 9	77	5	3755	1488	20.0	986	737	5.0	2869	**20**	9	**48**
Site 10	77	5	3755	1488	20.0	1438	464	5.0	2533	**19**	9	**49**
Site 11	77	1	3755	1488	20.0	2731	1092	5.0	1098	**16**	3	**58**

EXISTING

Receptor	Public Speakers											
	Leq at 30 ft	Rows of Building	Distance factor = 20log(D/30)								Shielding	dBA at receptor
			Source Location			Receptor Location			Distance	dBA		
			X	Y	Z	X	Y	Z	(feet)			
Site 1	75	0	3375	1519	20.0	4497	1448	5.0	1124	**31**	0	**44**
Site 2	75	2	3375	1519	20.0	3556	2970	5.0	1462	**34**	5	**37**
Site 3	75	3	3375	1519	20.0	2624	1889	5.0	837	**29**	6	**40**
Site 4	75	4	3375	1519	20.0	2320	1866	5.0	1111	**31**	8	**36**
Site 5	75	5	3375	1519	20.0	1879	1948	5.0	1556	**34**	9	**32**
Site 6	75	5	3375	1519	20.0	1672	2202	5.0	1835	**36**	9	**30**
Site 7	75	5	3375	1519	20.0	1449	1673	5.0	1932	**36**	9	**30**
Site 8	75	5	3375	1519	20.0	1076	1318	5.0	2308	**38**	9	**28**
Site 9	75	5	3375	1519	20.0	986	737	5.0	2514	**38**	9	**28**
Site 10	75	5	3375	1519	20.0	1438	464	5.0	2206	**37**	9	**29**
Site 11	75	1	3375	1519	20.0	2731	1092	5.0	773	**28**	3	**44**

NO BUILD

Receptor	Public Speakers											
	Leq at 30 ft	Rows of Building	Distance factor = 20log(D/30)								Shielding	dBA at receptor
			Source Location			Receptor Location			Distance	dBA		
			X	Y	Z	X	Y	Z	(feet)			
Site 1	75	0	3152	1318	20.0	4497	1448	5.0	1351	**33**	0	**42**
Site 2	75	2	3152	1318	20.0	3556	2970	5.0	1701	**35**	5	**35**
Site 3	75	3	3152	1318	20.0	2624	1889	5.0	778	**28**	6	**41**
Site 4	75	4	3152	1318	20.0	2320	1866	5.0	996	**30**	8	**37**
Site 5	75	5	3152	1318	20.0	1879	1948	5.0	1420	**34**	9	**32**
Site 6	75	5	3152	1318	20.0	1672	2202	5.0	1724	**35**	9	**31**
Site 7	75	5	3152	1318	20.0	1449	1673	5.0	1740	**35**	9	**31**
Site 8	75	5	3152	1318	20.0	1076	1318	5.0	2076	**37**	9	**29**
Site 9	75	5	3152	1318	20.0	986	737	5.0	2243	**37**	9	**29**
Site 10	75	5	3152	1318	20.0	1438	464	5.0	1915	**36**	9	**30**
Site 11	75	1	3152	1318	20.0	2731	1092	5.0	478	**24**	3	**48**

EXISTING

Receptor	People Noise											
	Leq at 30 ft	Rows of Building	Distance factor = 10log(D/30)								Shielding	dBA at receptor
			Source Location			Receptor Location			Distance	dBA		
			X	Y	Z	X	Y	Z	(feet)			
Site 1	70	0	3375	1519	5.0	4497	1448	5.0	1124	**16**	0	**54**
Site 2	70	2	3375	1519	5.0	3556	2970	5.0	1462	**17**	5	**49**
Site 3	70	3	3375	1519	5.0	2624	1889	5.0	837	**14**	6	**50**
Site 4	70	4	3375	1519	5.0	2320	1866	5.0	1111	**16**	8	**47**
Site 5	70	5	3375	1519	5.0	1879	1948	5.0	1556	**17**	9	**44**
Site 6	70	5	3375	1519	5.0	1672	2202	5.0	1835	**18**	9	**43**
Site 7	70	5	3375	1519	5.0	1449	1673	5.0	1932	**18**	9	**43**
Site 8	70	5	3375	1519	5.0	1076	1318	5.0	2308	**19**	9	**42**
Site 9	70	5	3375	1519	5.0	986	737	5.0	2514	**19**	9	**42**
Site 10	70	5	3375	1519	5.0	1438	464	5.0	2206	**19**	9	**42**
Site 11	70	1	3375	1519	5.0	2731	1092	5.0	773	**14**	3	**53**

NO BUILD

Receptor	People Noise											
	Leq at 30 ft	Rows of Building	Distance factor = 10log(D/30)								Shielding	dBA at receptor
			Source Location			Receptor Location			Distance	dBA		
			X	Y	Z	X	Y	Z	(feet)			
Site 1	70	0	3152	1318	5.0	4497	1448	5.0	1351	**17**	0	**53**
Site 2	70	2	3152	1318	5.0	3556	2970	5.0	1701	**18**	5	**48**
Site 3	70	3	3152	1318	5.0	2624	1889	5.0	778	**14**	6	**50**
Site 4	70	4	3152	1318	5.0	2320	1866	5.0	996	**15**	8	**47**
Site 5	70	5	3152	1318	5.0	1879	1948	5.0	1420	**17**	9	**44**
Site 6	70	5	3152	1318	5.0	1672	2202	5.0	1724	**18**	9	**43**
Site 7	70	5	3152	1318	5.0	1449	1673	5.0	1740	**18**	9	**43**
Site 8	70	5	3152	1318	5.0	1076	1318	5.0	2076	**18**	9	**43**
Site 9	70	5	3152	1318	5.0	986	737	5.0	2243	**19**	9	**42**
Site 10	70	5	3152	1318	5.0	1438	464	5.0	1915	**18**	9	**43**
Site 11	70	1	3152	1318	5.0	2731	1092	5.0	478	**12**	3	**55**

EXISTING

Receptor	Ride Motors												Total dBA at receptor
	Leq at 30 ft	Rows of Building	Distance factor = 15log(D/30)								Shielding	dBA at receptor	
			Source Location			Receptor Location			Distance	dBA			
			X	Y	Z	X	Y	Z	(feet)				
Site 1	65	0	3375	1519	5.0	4497	1448	5.0	1124	**24**	0	**41**	63.7
Site 2	65	2	3375	1519	5.0	3556	2970	5.0	1462	**25**	5	**35**	56.4
Site 3	65	3	3375	1519	5.0	2624	1889	5.0	837	**22**	6	**37**	56.2
Site 4	65	4	3375	1519	5.0	2320	1866	5.0	1111	**24**	8	**34**	53.7
Site 5	65	5	3375	1519	5.0	1879	1948	5.0	1556	**26**	9	**30**	51.0
Site 6	65	5	3375	1519	5.0	1672	2202	5.0	1835	**27**	9	**29**	50.4
Site 7	65	5	3375	1519	5.0	1449	1673	5.0	1932	**27**	9	**29**	50.1
Site 8	65	5	3375	1519	5.0	1076	1318	5.0	2308	**28**	9	**28**	49.5
Site 9	65	5	3375	1519	5.0	986	737	5.0	2514	**29**	9	**27**	49.1
Site 10	65	5	3375	1519	5.0	1438	464	5.0	2206	**28**	9	**28**	49.7
Site 11	65	1	3375	1519	5.0	2731	1092	5.0	773	**21**	3	**41**	59.6

NO BUILD

Receptor	Ride Motors												Total dBA at receptor
	Leq at 30 ft	Rows of Building	Distance factor = 15log(D/30)								Shielding	dBA at receptor	
			Source Location			Receptor Location			Distance	dBA			
			X	Y	Z	X	Y	Z	(feet)				
Site 1	65	0	3152	1318	5.0	4497	1448	5.0	1351	**25**	0	**40**	63.6
Site 2	65	2	3152	1318	5.0	3556	2970	5.0	1701	**26**	5	**34**	56.3
Site 3	65	3	3152	1318	5.0	2624	1889	5.0	778	**21**	6	**38**	56.3
Site 4	65	4	3152	1318	5.0	2320	1866	5.0	996	**23**	8	**35**	53.8
Site 5	65	5	3152	1318	5.0	1879	1948	5.0	1420	**25**	9	**31**	51.1
Site 6	65	5	3152	1318	5.0	1672	2202	5.0	1724	**26**	9	**30**	50.4
Site 7	65	5	3152	1318	5.0	1449	1673	5.0	1740	**26**	9	**30**	50.2
Site 8	65	5	3152	1318	5.0	1076	1318	5.0	2076	**28**	9	**28**	49.6
Site 9	65	5	3152	1318	5.0	986	737	5.0	2243	**28**	9	**28**	49.3
Site 10	65	5	3152	1318	5.0	1438	464	5.0	1915	**27**	9	**29**	49.8
Site 11	65	1	3152	1318	5.0	2731	1092	5.0	478	**18**	3	**44**	60.4

BUILD

Receptor	Cyclone Operations											
	Leq at 30 ft	**Rows of Building**	Distance factor = 10log(D/30)								Shielding	dBA at receptor
			Source Location			Receptor Location			Distance	dBA		
			X	Y	Z	X	Y	Z	(feet)			
Site 1	77	0	3755	1488	20.0	4497	1448	5.0	743	**14**	0	**63**
Site 2	77	2	3755	1488	20.0	3556	2970	5.0	1495	**17**	5	**56**
Site 3	77	3	3755	1488	20.0	2624	1889	5.0	1200	**16**	6	**55**
Site 4	77	4	3755	1488	20.0	2320	1866	5.0	1484	**17**	8	**53**
Site 5	77	5	3755	1488	20.0	1879	1948	5.0	1932	**18**	9	**50**
Site 6	77	5	3755	1488	20.0	1672	2202	5.0	2202	**19**	9	**49**
Site 7	77	5	3755	1488	20.0	1449	1673	5.0	2313	**19**	9	**49**
Site 8	77	5	3755	1488	20.0	1076	1318	5.0	2684	**20**	9	**48**
Site 9	77	5	3755	1488	20.0	986	737	5.0	2869	**20**	9	**48**
Site 10	77	5	3755	1488	20.0	1438	464	5.0	2533	**19**	9	**49**
Site 11	77	1	3755	1488	20.0	2731	1092	5.0	1098	**16**	3	**58**

BUILD

Receptor	Public Speakers											
	Leq at 30 ft	**Rows of Building**	Distance factor = 20log(D/30)								Shielding	dBA at receptor
			Source Location			Receptor Location			Distance	dBA		
			X	Y	Z	X	Y	Z	(feet)			
Site 1	75	1	3560	1098	20.0	4497	1448	5.0	1000	**30**	3	**42**
Site 2	75	3	3560	1098	20.0	3556	2970	5.0	1872	**36**	6	**33**
Site 3	75	0	2797	1040	20.0	2624	1889	5.0	867	**29**	0	**46**
Site 4	75	3	2797	1040	20.0	2320	1866	5.0	954	**30**	6	**39**
Site 5	75	4	2212	867	20.0	1879	1948	5.0	1131	**32**	8	**36**
Site 6	75	5	2212	867	20.0	1672	2202	5.0	1440	**34**	9	**32**
Site 7	75	3	2212	867	20.0	1449	1673	5.0	1110	**31**	6	**38**
Site 8	75	3	2212	867	20.0	1076	1318	5.0	1222	**32**	6	**37**
Site 9	75	3	2212	867	20.0	986	737	5.0	1233	**32**	6	**37**
Site 10	75	3	2212	867	20.0	1438	464	5.0	873	**29**	6	**40**
Site 11	75	0	2797	1040	20.0	2731	1092	5.0	85	**9**	0	**66**

BUILD

Receptor	People Noise											
	Leq at 30 ft	**Rows of Building**	Distance factor = 10log(D/30)								Shielding	dBA at receptor
			Source Location			Receptor Location			Distance	dBA		
			X	Y	Z	X	Y	Z	(feet)			
Site 1	70	1	3560	1098	5.0	4497	1448	5.0	1000	**15**	3	**52**
Site 2	70	3	3560	1098	5.0	3556	2970	5.0	1872	**18**	6	**46**
Site 3	70	0	2797	1040	5.0	2624	1889	5.0	866	**15**	0	**55**
Site 4	70	3	2797	1040	5.0	2320	1866	5.0	954	**15**	6	**49**
Site 5	70	4	2212	867	5.0	1879	1948	5.0	1131	**16**	8	**47**
Site 6	70	5	2212	867	5.0	1672	2202	5.0	1440	**17**	9	**44**
Site 7	70	3	2212	867	5.0	1449	1673	5.0	1110	**16**	6	**48**
Site 8	70	3	2212	867	5.0	1076	1318	5.0	1222	**16**	6	**48**
Site 9	70	3	2212	867	5.0	986	737	5.0	1233	**16**	6	**48**
Site 10	70	3	2212	867	5.0	1438	464	5.0	873	**15**	6	**49**
Site 11	70	0	2797	1040	5.0	2731	1092	5.0	84	**4**	0	**66**

BUILD

Receptor	Ride Motors												Total dBA at receptor
	Leq at 30 ft	**Rows of Building**	Distance factor = 15log(D/30)								Shielding	dBA at receptor	
			Source Location			Receptor Location			Distance	dBA			
			X	Y	Z	X	Y	Z	(feet)				
Site 1	65	1	3560	1098	5.0	4497	1448	5.0	1000	**23**	3	**39**	64.7
Site 2	65	3	3560	1098	5.0	3556	2970	5.0	1872	**27**	6	**32**	57.8
Site 3	65	0	2797	1040	5.0	2624	1889	5.0	866	**22**	0	**43**	63.9
Site 4	65	3	2797	1040	5.0	2320	1866	5.0	954	**23**	6	**36**	58.2
Site 5	65	4	2212	867	5.0	1879	1948	5.0	1131	**24**	8	**34**	55.9
Site 6	65	5	2212	867	5.0	1672	2202	5.0	1440	**25**	9	**31**	53.9
Site 7	65	3	2212	867	5.0	1449	1673	5.0	1110	**24**	6	**35**	57.0
Site 8	65	3	2212	867	5.0	1076	1318	5.0	1222	**24**	6	**35**	56.5
Site 9	65	3	2212	867	5.0	986	737	5.0	1233	**24**	6	**35**	56.4
Site 10	65	3	2212	867	5.0	1438	464	5.0	873	**22**	6	**37**	57.8
Site 11	65	0	2797	1040	5.0	2731	1092	5.0	84	**7**	0	**58**	74.2

BUILD

Receptor	Roller coasters Operations											
	Leq at 30 ft	**Rows of Building**	Distance factor = 10log(D/30)								Shielding	dBA at receptor
			Source Location			Receptor Location			Distance	dBA		
			X	Y	Z	X	Y	Z	(feet)			
Site 1	77	1	3560	1098	20.0	4497	1448	5.0	1000	**15**	3	**59**
Site 2	77	3	3560	1098	20.0	3556	2970	5.0	1872	**18**	6	**53**
Site 3	77	0	2797	1040	20.0	2624	1889	5.0	867	**15**	0	**62**
Site 4	77	3	2797	1040	20.0	2320	1866	5.0	954	**15**	6	**56**
Site 5	77	4	2212	867	20.0	1879	1948	5.0	1131	**16**	8	**54**
Site 6	77	5	2212	867	20.0	1672	2202	5.0	1440	**17**	9	**51**
Site 7	77	3	2212	867	20.0	1449	1673	5.0	1110	**16**	6	**55**
Site 8	77	3	2212	867	20.0	1076	1318	5.0	1222	**16**	6	**55**
Site 9	77	3	2212	867	20.0	986	737	5.0	1233	**16**	6	**55**
Site 10	77	3	2212	867	20.0	1438	464	5.0	873	**15**	6	**56**
Site 11	77	0	2797	1040	20.0	2731	1092	5.0	85	**5**	0	**72**

Noise Analysis Results in L10

Note: This L10 calculation sheet is valid for the following in addition to Residential 7 AM - 10 PM: school, museum, library, court, house of worship, transient hotel or motel, public meeting room, auditorium, out patient public health facility, commercia

Categories	
L10 < or equal 65 dBA	accepatble
65 < L10 < or equal 70 dBA	marginaly acceptable
70 < L10 < or equal 80 dBA	marginaly acceptable
L10 > 80 dBA	clearly unacceptable

Receptor Location	Site	Hour	No Build Change	Existing L10	Category (Existing L10 noise levels)	Existing L10 + NB Change = NB L10	Category (NB L10 noise levels)	Build Change	No Build L10	Build Change = L10	Category (B L10 noise levels)	CEQR criteria 45 dB(A)	Building Attenuation required
Surf Ave btw W 5th St and W 8th St	1	Weekday AM	1.0	71.5	MARGINALLY UNACCEPTABLE	72.5	MARGINALLY UNACCEPTABLE	0.3	72.5	72.8	MARGINALLY UNACCEPTABLE	45	28
		Weekday MD	0.6	70.5	MARGINALLY UNACCEPTABLE	71.1	MARGINALLY UNACCEPTABLE	0.9	71.1	72.0	MARGINALLY UNACCEPTABLE	45	27
		Weekday PM	0.8	70.3	MARGINALLY UNACCEPTABLE	71.1	MARGINALLY UNACCEPTABLE	0.9	71.1	72.0	MARGINALLY UNACCEPTABLE	45	27
		Saturday MD	0.8	71.2	MARGINALLY UNACCEPTABLE	72.0	MARGINALLY UNACCEPTABLE	0.7	72.0	72.7	MARGINALLY UNACCEPTABLE	45	28
		Saturday PM	0.8	72.0	MARGINALLY UNACCEPTABLE	72.8	MARGINALLY UNACCEPTABLE	0.8	72.8	73.6	MARGINALLY UNACCEPTABLE	45	29
Neptune Ave btw W 8th St and W 12th St	2	Weekday AM	0.9	70.1	MARGINALLY UNACCEPTABLE	71.0	MARGINALLY UNACCEPTABLE	0.5	71.0	71.5	MARGINALLY UNACCEPTABLE	45	27
		Weekday MD	1.2	74.3	MARGINALLY UNACCEPTABLE	75.5	MARGINALLY UNACCEPTABLE	0.8	75.5	76.3	MARGINALLY UNACCEPTABLE	45	31
		Weekday PM	0.5	68.3	MARGINALLY ACCEPTABLE	68.8	MARGINALLY ACCEPTABLE	1.3	68.8	70.1	MARGINALLY UNACCEPTABLE	45	25
		Saturday MD	0.8	71.4	MARGINALLY UNACCEPTABLE	72.2	MARGINALLY UNACCEPTABLE	1.0	72.2	73.3	MARGINALLY UNACCEPTABLE	45	28
		Saturday PM	0.7	70.8	MARGINALLY UNACCEPTABLE	71.6	MARGINALLY UNACCEPTABLE	1.1	71.6	72.7	MARGINALLY UNACCEPTABLE	45	28
Stillwell Ave btw Surf Ave and Neptune Ave	3	Weekday AM	0.6	76.4	MARGINALLY UNACCEPTABLE	77.0	MARGINALLY UNACCEPTABLE	0.5	77.0	77.5	MARGINALLY UNACCEPTABLE	45	33
		Weekday MD	1.0	74.6	MARGINALLY UNACCEPTABLE	75.6	MARGINALLY UNACCEPTABLE	1.3	75.6	76.9	MARGINALLY UNACCEPTABLE	45	32
		Weekday PM	0.9	75.7	MARGINALLY UNACCEPTABLE	76.6	MARGINALLY UNACCEPTABLE	1.1	76.6	77.7	MARGINALLY UNACCEPTABLE	45	33
		Saturday MD	0.7	77.1	MARGINALLY UNACCEPTABLE	77.8	MARGINALLY UNACCEPTABLE	1.0	77.8	78.7	MARGINALLY UNACCEPTABLE	45	34
		Saturday PM	0.8	78.2	MARGINALLY UNACCEPTABLE	79.0	MARGINALLY UNACCEPTABLE	0.9	79.0	79.9	MARGINALLY UNACCEPTABLE	45	35
W 15th St btw Mermaid Ave and Surf Ave	4	Weekday AM	1.2	65.8	MARGINALLY ACCEPTABLE	67.0	MARGINALLY ACCEPTABLE	0.7	67.0	67.7	MARGINALLY ACCEPTABLE	45	23
		Weekday MD	0.8	61.5	ACCEPTABLE	62.3	ACCEPTABLE	1.9	62.3	64.2	ACCEPTABLE	45	19
		Weekday PM	0.8	62.5	ACCEPTABLE	63.2	ACCEPTABLE	1.7	63.2	64.9	ACCEPTABLE	45	20
		Saturday MD	0.7	63.4	ACCEPTABLE	64.1	ACCEPTABLE	1.9	64.1	66.0	MARGINALLY ACCEPTABLE	45	21
		Saturday PM	0.7	65.5	MARGINALLY ACCEPTABLE	66.2	MARGINALLY ACCEPTABLE	1.2	66.2	67.4	MARGINALLY ACCEPTABLE	45	22
Mermaid Ave btw W 16th St and W 17th St	5	Weekday AM	0.6	71.3	MARGINALLY UNACCEPTABLE	71.9	MARGINALLY UNACCEPTABLE	0.1	71.9	72.0	MARGINALLY UNACCEPTABLE	45	27
		Weekday MD	0.6	67.0	MARGINALLY ACCEPTABLE	67.6	MARGINALLY ACCEPTABLE	0.6	67.6	68.1	MARGINALLY ACCEPTABLE	45	23
		Weekday PM	0.8	67.4	MARGINALLY ACCEPTABLE	68.2	MARGINALLY ACCEPTABLE	0.4	68.2	68.6	MARGINALLY ACCEPTABLE	45	24
		Saturday MD	0.7	66.6	MARGINALLY ACCEPTABLE	67.3	MARGINALLY ACCEPTABLE	0.5	67.3	67.8	MARGINALLY ACCEPTABLE	45	23
		Saturday PM	0.7	66.3	MARGINALLY ACCEPTABLE	67.0	MARGINALLY ACCEPTABLE	0.5	67.0	67.5	MARGINALLY ACCEPTABLE	45	23
W17th St btw Neptune Ave and Mermaid Ave	6	Weekday AM	1.1	75.7	MARGINALLY UNACCEPTABLE	76.8	MARGINALLY UNACCEPTABLE	2.6	76.8	79.4	MARGINALLY UNACCEPTABLE	45	34
		Weekday MD	0.9	72.9	MARGINALLY UNACCEPTABLE	73.7	MARGINALLY UNACCEPTABLE	3.5	73.7	77.2	MARGINALLY UNACCEPTABLE	45	32
		Weekday PM	1.3	73.2	MARGINALLY UNACCEPTABLE	74.4	MARGINALLY UNACCEPTABLE	2.1	74.4	76.6	MARGINALLY UNACCEPTABLE	45	32
		Saturday MD	1.1	72.3	MARGINALLY UNACCEPTABLE	73.4	MARGINALLY UNACCEPTABLE	1.8	73.4	75.3	MARGINALLY UNACCEPTABLE	45	30
		Saturday PM	1.1	71.1	MARGINALLY UNACCEPTABLE	72.2	MARGINALLY UNACCEPTABLE	0.9	72.2	73.0	MARGINALLY UNACCEPTABLE	45	28
W 19th St btw Surf Ave and Mermaid Ave	7	Weekday AM	1.1	61.4	ACCEPTABLE	62.5	ACCEPTABLE	0.8	62.5	63.3	ACCEPTABLE	45	18
		Weekday MD	1.3	60.9	ACCEPTABLE	62.2	ACCEPTABLE	2.3	62.2	64.5	ACCEPTABLE	45	20
		Weekday PM	1.1	62.4	ACCEPTABLE	63.5	ACCEPTABLE	1.7	63.5	65.2	MARGINALLY ACCEPTABLE	45	20
		Saturday MD	1.0	61.1	ACCEPTABLE	62.2	ACCEPTABLE	2.2	62.2	64.4	ACCEPTABLE	45	19
		Saturday PM	0.9	61.8	ACCEPTABLE	62.7	ACCEPTABLE	2.0	62.7	64.7	ACCEPTABLE	45	20
Surf Ave btw W 20th St and W 21st St	8	Weekday AM	0.8	76.0	MARGINALLY UNACCEPTABLE	76.8	MARGINALLY UNACCEPTABLE	0.4	76.8	77.2	MARGINALLY UNACCEPTABLE	45	32
		Weekday MD	0.9	72.7	MARGINALLY UNACCEPTABLE	73.6	MARGINALLY UNACCEPTABLE	0.7	73.6	74.3	MARGINALLY UNACCEPTABLE	45	29
		Weekday PM	1.0	71.8	MARGINALLY UNACCEPTABLE	72.7	MARGINALLY UNACCEPTABLE	0.7	72.7	73.4	MARGINALLY UNACCEPTABLE	45	28
		Saturday MD	1.0	72.9	MARGINALLY UNACCEPTABLE	73.9	MARGINALLY UNACCEPTABLE	0.7	73.9	74.6	MARGINALLY UNACCEPTABLE	45	30
		Saturday PM	0.8	70.9	MARGINALLY UNACCEPTABLE	71.7	MARGINALLY UNACCEPTABLE	0.8	71.7	72.4	MARGINALLY UNACCEPTABLE	45	27
W 21st St btw Surf Ave and Boardwalk	9	Weekday AM	0.6	63.2	ACCEPTABLE	63.8	ACCEPTABLE	2.0	63.8	65.8	MARGINALLY ACCEPTABLE	45	21
		Weekday MD	1.5	63.6	ACCEPTABLE	65.0	ACCEPTABLE	1.9	65.0	66.9	MARGINALLY ACCEPTABLE	45	22
		Weekday PM	0.5	63.1	ACCEPTABLE	63.5	ACCEPTABLE	2.0	63.5	65.5	MARGINALLY ACCEPTABLE	45	21
		Saturday MD	0.4	63.8	ACCEPTABLE	64.2	ACCEPTABLE	1.5	64.2	65.6	MARGINALLY ACCEPTABLE	45	21
		Saturday PM	0.7	60.4	ACCEPTABLE	61.1	ACCEPTABLE	2.3	61.1	63.3	ACCEPTABLE	45	18
Boardwalk btw W 21st st and W 20th St	10	Weekday AM	0.6	56.8	ACCEPTABLE	57.4	ACCEPTABLE	0.2	57.4	57.6	ACCEPTABLE	45	13
		Weekday MD	0.7	56.5	ACCEPTABLE	57.2	ACCEPTABLE	3.7	57.2	60.9	ACCEPTABLE	45	16
		Weekday PM	0.2	58.2	ACCEPTABLE	58.4	ACCEPTABLE	3.7	58.4	62.1	ACCEPTABLE	45	17
		Saturday MD	0.8	56.1	ACCEPTABLE	56.9	ACCEPTABLE	4.3	56.9	61.3	ACCEPTABLE	45	16
		Saturday PM	0.6	56.8	ACCEPTABLE	57.4	ACCEPTABLE	3.7	57.4	61.1	ACCEPTABLE	45	16
Stillwell Ave btw Surf Ave and Boardwalk	11	Weekday AM	0.9	57.5	ACCEPTABLE	58.4	ACCEPTABLE	0.9	58.4	59.3	ACCEPTABLE	45	14
		Weekday MD	0.8	63.3	ACCEPTABLE	64.0	ACCEPTABLE	12.6	64.0	76.6	MARGINALLY UNACCEPTABLE	45	32
		Weekday PM	0.9	64.1	ACCEPTABLE	65.0	ACCEPTABLE	12.0	65.0	77.0	MARGINALLY UNACCEPTABLE	45	32
		Saturday MD	0.8	63.3	ACCEPTABLE	64.1	ACCEPTABLE	11.9	64.1	76.0	MARGINALLY UNACCEPTABLE	45	31
		Saturday PM	0.8	64.1	ACCEPTABLE	64.9	ACCEPTABLE	11.9	64.9	76.9	MARGINALLY UNACCEPTABLE	45	32

Building Attenuation (in dBA): Year 2019

Potential Development Site	Block	Governing Noise Site	Maximum Build L10	Building Attenuation
1 (North)	7072	8, 9	77.2	35
1 (South)	7072	9, 10	66.9	25
2 (North)	7071	8, 9	77.2	35
2 (South)	7071	9, 10	66.9	25
3	7064	3, 4	79.9	35
4	7063	4, 8	77.2	35
5	7062	7, 8	77.2	35
6	7061	7, 8	77.2	35
7	7060	7, 8	77.2	35
8	7063	5	72.0	30
9	7061	5	72.0	30
10	7060	5	72.0	30
11	7074	11	77.0	35
12 (East)	8696	1, 11	77.0	35
12 (West)	8696	1, 11	77.0	35
13	7074	11	77.0	35
14	8695	11	77.0	35
15	8696	11	77.0	35
16 & 17	7266	1	73.6	30
18-20	7268	1	73.6	30
A (North)	7073	8, 9	77.2	35
A (South)	7073	9, 10	66.9	25
B	7064	3	79.9	35
C	7064	5	72.0	30
D & E	7063	5	72.0	30
F	7061	5	72.0	30
G	7074	1, 11	77.0	35
H	8694	1, 11	77.0	35
I	8696	11	77.0	35
J & K	7268	1	73.6	30

Note: Attenuation values shown assume a residential use; commercial uses would require 5 dBA less attenuation.

Noise Analysis Results at Additional receptor sites on West 17th Street

Data at noise receptor site 6 for calculation purpose only

Increase 3 dBA or more

			EXISTING CONDITION									NO BUILD CONDITION (2019)							BUILD CONDITION (2019)						
			Measured Existing Levels			RWCDS Traffic Existing Levels						Traffic							Traffic						
Site	Address	Time	Measure L_{eq}	Measure L_{10}	TNM L_{eq}	TNM L_{eq}	Correction Factor	Adjust Traffic L_{eq}	Amuse-ment Leq	Adjust Existing Leq	Adjust Existing L10	TNM Leq	Correction Factor	Traffic L_{eq}	Amuse-ment Leq	No Build Leq	No Build L10	Change Leq	TNM Leq	Correction Factor	Traffic L_{eq}	Amuse-ment Leq	Build Leq	Build L10	Change Leq
A1	2813 W17th St	Weekday MD	69.4	72.9	64.2	62.8	-1.4	68.0	50.4	68.1	71.6	63.7	0.9	68.9	50.4	69.0	72.5	0.9	67.1	3.4	72.3	53.9	72.4	75.9	3.4
A2	2820 W17th St	Weekday MD	69.4	72.9	64.2	62.6	-1.6	67.8	50.4	67.9	71.4	63.5	0.9	68.7	50.4	68.8	72.3	0.9	67.1	3.6	72.3	53.9	72.4	75.9	3.6
A3	2830 W17th St	Weekday MD	69.4	72.9	64.2	62.2	-2.0	67.4	50.4	67.5	71.0	63.1	0.9	68.3	50.4	68.4	71.9	0.9	66.7	3.6	71.9	53.9	72.0	75.5	3.6
A4	2844 W17th St	Weekday MD	69.4	72.9	64.2	62.5	-1.7	67.7	50.4	67.8	71.3	63.4	0.9	68.6	50.4	68.7	72.2	0.9	67.0	3.6	72.2	53.9	72.3	75.8	3.6
A5	2852 W17th St	Weekday MD	69.4	72.9	64.2	62.5	-1.7	67.7	50.4	67.8	71.3	63.4	0.9	68.6	50.4	68.7	72.2	0.9	66.9	3.5	72.1	53.9	72.2	75.7	3.5
A6	2874 W17th St	Weekday MD	69.4	72.9	64.2	63.1	-1.1	68.3	50.4	68.4	71.9	64.0	0.9	69.2	50.4	69.3	72.8	0.9	66.9	2.9	72.1	53.9	72.2	75.7	2.9
A7	2890 W17th St	Weekday MD	69.4	72.9	64.2	65.5	1.3	70.7	50.4	70.7	74.2	66.3	0.8	71.5	50.4	71.5	75.0	0.8	68.1	1.8	73.3	53.9	73.3	76.8	1.8
A8	2859 W17th St	Weekday MD	69.4	72.9	64.2	62.8	-1.4	68.0	50.4	68.1	71.6	63.7	0.9	68.9	50.4	69.0	72.5	0.9	67.1	3.4	72.3	53.9	72.4	75.9	3.4

MEMORANDUM

MITIGATION FOR SIGNIFICANT ADVERSE NOISE IMPACTS ON WEST 17TH STREET BETWEEN MERMAID AND NEPTUNE AVENUES

CONEY ISLAND REZONING EIS

The proposed actions would result in a significant adverse noise impact during the Weekday midday period on West 17th Street between Mermaid and Neptune Avenues due to traffic volume increases. This noise impact could affect 38 residential buildings, three institutional buildings, and one commercial building. For sensitive receptors on this block within approximately 150 feet north of Mermaid Avenue (which include a church and convent), there would be no potential significant adverse impacts, because noise due to relatively heavy traffic on Mermaid Avenue would partially mask the increase in noise due to project-generated traffic on this portion of West 17th Street.

The New York City *CEQR Technical Manual* has set noise attenuation quantities for buildings, based on exterior noise levels (see CEQR Table 3R-4, "Required Attenuation Values to Achieve Acceptable Interior Noise Levels."). Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower, and are determined based on exterior $L_{10(1)}$ noise levels. At the buildings where significant adverse impacts are predicted to occur, the highest predicted Build $L_{10(1)}$ noise level would be 75.9 dBA (see Chapter 19, "Noise," Table 19-10). The maximum building attenuation value would be approximately 31 dBA to ensure that interior noise levels at the impacted buildings would satisfy the applicable interior noise criteria.

Potential significant adverse impacts at buildings on this portion of West 17th Street could be mitigated with double-glazed windows or storm windows with good sealing properties, and air-conditioning units (i.e., alternative ventilation). An alternative means of ventilation would be necessary to ensure that windows could be closed at any time of the year. With these measures, the window/wall attenuation for the impacted buildings would be approximately 30-35 dBA. Consequently, these measures would be expected to provide sufficient attenuation to achieve 45 dBA interior noise levels and mitigate all significant adverse impacts on West 17th Street.

On March 27 and April 17, 2009, field surveys were conducted of the potentially impacted buildings on West 17th Street to determine the number of housing units containing air conditioners and the condition of windows and their potential to meet attenuation requirements. The field survey determined that most of the potentially impacted buildings are attached buildings with double-paned windows in decent condition. However, the two buildings at 2819 and 2849 West 17th Street have some single-paned windows (see Table 1 below). As part of the project's proposed mitigation program, the City would—at no cost to the property owners—make the following measures available to property owners where significant adverse impacts are expected to occur:

- Inspect and provide acoustical treatments, including sealing and caulking of windows;
- Replace single-paned windows with either storm windows or double-paned windows; and
- Provide air-conditioning units to allow occupants to keep their windows shut, even in warm weather.

Table 1 below lists each potentially impacted building on West 17th Street between Mermaid and Neptune Avenues, provides the number and type of existing windows at each building, and shows the number of air-conditioning units that would be required for window/wall attenuation at each building. It is assumed that one air-conditioning unit would be required for each floor of an impacted building, with a total of 68 air-conditioning units required for the impacted buildings. The single-paned windows at 2819 and 2849 West 17th Street would be replaced with storm windows.

Letters describing the project's mitigation program and a list of authorized contractors to undertake the necessary work would be sent to the owners of the impacted buildings.

Table 1
Noise Mitigation Measures – Window/Wall Attenuation

Potentially Impacted Buildings on West 17th Street	Existing Windows		Air-Conditioning Units Needed
	Single-paned	Double-paned	
2815 (Residential)		4	2
2819 (Residential)	6	4	2
2821 (Residential)		4	2
2823 (Residential)		4	2
2823A (Residential)		4	2
2825 (Residential)		4	2
2827 (Residential)		4	1
2829 (Residential)		4	1
2831 (Residential)		5	1
2833 (Residential)		1	1
2835 (Residential)		7	2
2847 (Residential)		4	1
2849 (Church Convent)	2	3	1
2851 (Church)		4	0
2853 (Residential)		6	2
2855 (Residential)		4	2
2857 (Residential)		4	1
2863 (Residential)		6	2
2865 (Residential)		6	2
2867 (Residential)		11	2
2869 (Residential)		11	3
2871 (Residential)		3	2
2873 (Commercial)		2	1
2820 (Residential)		3	2
2822 (Residential)		3	2
2824 (Residential)		3	0
2826 (Residential)		3	2
2828 (Residential)		3	1
2830 (Residential)		3	0
2832 (Residential)		3	0
2834 (Residential)		3	0
2836 (Residential)		3	0
2842 (Residential)		4	1
2844 (Residential)		4	2
2846 (Residential)		9	3
2848 (Residential)		12	3
2850 (Residential)		9	3
2852 (Residential)		9	3
2854 (Residential)		9	3
2858 (Residential)		9	2
2860 (Residential)		11	1
2862 (Residential)		10	3
2866 (Church Rectory)		12	0
Total	8	234	68